NavMed 369

RESTRICTED

NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar, (MC), U.S.N.

Vol. 8 Friday, September 27, 1946 No. 7

Notice: Items marked "Restricted" should not be published or communicated to anyone except for official purposes.

TABLE OF CONTENTS

* * * * * *
* * * * *

(Not Restricted)

Concerning the Significance of the Blood Alcohol Determination: Investigating officers are constantly asking whether individuals who show various blood alcohol levels may be considered drunk. Even medical officers are often confused about the interpretation of a given blood level of alcohol and sometimes make unwarranted statements. Some courts-martial have been known to dismiss charges of drunkenness against all defendants whose blood alcohol levels were less than 2.5 mg. per c.c. One Criminal Investigation Division agent denied the validity of any blood alcohol determination. A clarification of these erroneous concepts is required.

There is no exception in the case of ethyl alcohol to the general biologic law that varying amounts of pharmacological agents are required to produce a given effect in different individuals. In addition, an acquired tolerance develops in human beings to alcohol as it does to morphine, atropine, and certain other drugs. Thus, with habitual use increasingly larger amounts may be required to produce the same effect. Individuals vary so widely in their tolerance to alcohol that a hardened drinker with a blood level of 3 mg. per c.c. may show no outward sign of intoxication, while a neophyte with a blood level of 1 mg. per c.c. may be hilarious. For these reasons, in general, drunkenness should be determined for the most part not by a chemical test but by other testimony.

However, the blood alcohol determination has a definite place in investigation, for the blood alcohol level may corroborate or invalidate other testimony. Because the normal blood alcohol is zero, the presence of any alcohol in the blood means that the individual has ingested something containing alcohol. If a witness states that an individual was drunk, but the blood alcohol was found to be zero, his testimony is completely discredited. Witnesses may be highly unreliable, particularly when recalling the circumstances of brief periods of excitement and action. If the person whose condition is questioned is seriously injured, the pain may induce in him a sudden sobriety; or surgical shock may mask a profound state of drunkenness even to a skilled observer. On every seriously injured person brought to a dispensary or hospital accident room, a blood alcohol determination, therefore, invariably should be made for its assistance in determining the diagnosis and the line-of-duty status. Pathologists examining the victims of automobile or other accidents should not fail to obtain blood specimens as well as samples of brain tissue for this purpose. (In almost three years' experience with the Army the author found a nearly inexorable correlation between death in the jeep and alcohol in the blood.)

(Not Restricted)

The following generalizations based upon clinical experience can be made:

Blood Level	
1 mg. per c.c.	The majority of persons will not be drunk.
2 mg. per c.c.	The majority of persons will be drunk.
3 mg. per c.c.	A state of drunkenness will be present in 90 per cent or more of such persons.
4 mg. per c.c.	With almost no exceptions, a state of advanced drunkenness, often with coma, will exist in such persons.
7 mg. per c.c.	Death usually results.

The problem would be much simpler if the term "drunkenness" were discarded, and a determination were made only as to whether the ability of the individual to carry out a complicated or finely coordinated task such as driving a vehicle or flying has been impaired. The blood alcohol test is helpful in that it is known that even small quantities (less than 0.5 mg. per c.c.) of alcohol in the blood cause a serious slowing of reaction time, even though the person tested shows no outward sign, casually observable, that he has ingested alcohol. An individual whose competence to drive a vehicle or to perform other necessary or elective tasks has been compromised by the ingestion of alcohol, and who, as a result is involved in an accident with loss of life or limb or property, may be considered to be culpable of gross negligence. (Mil. Surgeon, June '46 - Mead)

* * * * * *

(Not Restricted)

Report on the Use of Penicillin in Peanut Oil and Beeswax: Geiger and Goerner, in their report on the use of penicillin in peanut oil and beeswax in the treatment of 5 patients with subacute bacterial endocarditis made certain observations which may be useful to many others.

The patients treated received the intramuscular injections once or twice daily over a period of from several weeks to months. One patient suffered only minimal local discomfort from the daily injections, practically all of which were given into the muscles of the lateral aspects of the thighs. Slight

local swelling was sometimes apparent for a few days, but even after six months of almost daily administrations, there was no apparent local induration or lumpiness. Two other patients suffered considerable local swelling and soreness, sometimes with erythema, which lasted for several days following each injection. In these two cases, the buttocks were the sites preferred for the injections. In the second patient, a week following the last injection, profuse urticaria developed for the first time in the patient's life. Five months later when skin patch and skin scratch tests with penicillin, peanut oil, and the penicillin-oil-wax mixture were performed, the results were negative. Two slightly tender subcutaneous nodules, probably attributable to the previous therapy, were noted in the buttocks at that time.

At first the handling and injection of the semisolid mixture proved extremely troublesome and difficult. Observance of the following technical details eliminated all difficulties. Before use, the ampule was heated in water at 45° C. for several minutes to melt the material and render it injectable. The needles and syringe, which were scrupulously dry, were also warmed to prevent cooling and congealing of the material during the injection. The warmed mixture, when flowing freely in the tilted vial, was quickly withdrawn through a 15-gauge needle into a 2-c.c. or 3-c.c. syringe with a snugly fitting piston (the air seal of the syringe could be improved, if indicated, by applying a drop of sterile mineral oil to the distal half of the piston). The injection was made without delay through a 20-gauge needle. It was found that a more effective injection force could be applied through the use of a syringe with a barrel fitted with a finger-gripping device. (B-D No. LC 3 was very satisfactory.)

Because considerable concentrations of penicillin in the serum are attainable for prolonged periods following single injections of penicillin in a mixture of oil and beeswax, and because the apparent curability of subacute bacterial endocarditis has been demonstrated with this preparation given once or twice daily for several weeks, a therapeutic regimen is offered that is far more simple for both the patient and the professional attendants than any previously employed in the treatment of this disease. The question naturally arises whether, with this form of penicillin, patients may be treated at home and spared the long and costly hospitalization hitherto required. Treatment at home would be feasible provided certain minimum bacteriologic controls were not neglected. The infecting organism in every case should be (1) isolated from the blood, (2) identified as a species usually reasonably inhibitable by penicillin, and (3) tested for its particular degree of sensitivity to penicillin. Finally, one should have assurance that the concentrations of penicillin attained in the blood under the conditions of the treatment generously exceed the minimal inhibition level of the organism. To treat without such bacteriologic controls is to invite defeat through either inadequate dosage

(Not Restricted)

or too long intervals between injections - circumstances that not only do not most quickly cure the patient but may occasionally lead to increased resistance of the infecting organism to penicillin and thereby make cure of the patient by penicillin impossible. Under circumstances in which bacteriologic facilities are minimal, some measure of control of the therapy may be achieved by the following simple and abbreviated procedure. One cubic centimeter of the patient's serum, previously warmed to 56° C. for five minutes to eliminate serum-inhibiting factors, is diluted with three volumes of broth media and is inoculated with an eighteen-hour blood-broth culture of the patient's organism; a tube containing 4 c.c. of broth only is similarly inoculated as a control for viability of the organism. Inhibition of growth in the tube containing serum implies that the penicillin concentrations are at least four times as high as the inhibition level of the organism concerned. Preliminary experiments for comparing this technic with measurements of the penicillin serum levels, using a minor modification of the method of Rammelkamp, suggest that it is valid.

Two favorable factors probably contributed to the rapid apparent cure in two of the authors' cases. In the first place, the infecting organisms proved relatively sensitive to penicillin in vitro. In the second place, satisfactory concentrations of penicillin were attained in the blood with either a single daily injection of 1.5 c.c. or twice-daily injections of 1 c.c. That such favorable circumstances will exist in any particular patient cannot be taken for granted. Recent reports of extensive studies in patients treated for venereal diseases indicate that single injections of 1 c.c. (300,000 units) fail to maintain serum penicillin concentrations in excess of 0.10 unit for more than twelve hours in the majority of cases, and that more voluminous injections serve chiefly to raise the initial serum levels rather than to prolong the effects. One may infer from this that most cases of subacute bacterial endocarditis require injections at twelve-hour intervals to assure maintenance of serum penicillin levels high enough to inhibit the majority of strains of Streptococcus viridans. (New England J. Med., Aug. 29, '46)

* * * * * *

(Not Restricted)

A Review of the Control of Upper Respiratory Diseases with Special Reference to Streptococcal Infections: Attention is again directed to the tremendous loss of man days in the Navy due to upper respiratory infections. The hemolytic streptococcus is the etiological agent in the majority of these infections.

Throughout the war years and since, a great amount of thought, study, and experimentation on the part of many highly trained investigators has been devoted to this serious problem in an effort to find a practical solution. As was

anticipated, the factors involved in the problem proved to be numerous. Some are relatively easily solved; some are complex scientifically and are not yet solved; and some are administratively difficult of accomplishment.

There is no reason to believe that the damaging effects from streptococcal infections will be less this season than in past winters. To be maximally effective, control measures against the streptococcus must anticipate its epidemic presence. Hence, it is hoped at this time to arouse the interest, in this problem, of all who are in any way responsible for or concerned with the health of the Navy. The wholehearted cooperation of all is desired in efforts to avoid the ravages of hemolytic streptococci. It is urged that action be taken on the recommendations made.

Climate: Ideally, the training camps of the Navy should be situated in the southern part of this country, thus allowing more time in the open air, both in recreation and training, less exposure to inclement weather, better ventilation, and greater dispersion of individuals during those first critical six weeks of "Boot Training."

Overcrowding: It is a well known fact that the speed of spread of a communicable disease is directly related to the propinquity of the next susceptible host. Minimum requirements for living space, falling usually within the standards established by the Medical Department for ventilation and comfort, are at times far from ideal from the standpoint of epidemic disease control. Studies in some epidemic areas revealed that even these minimal standards had not been kept. During the war years the dictates of military necessity often precluded proper spacing of personnel, and the astounding fact today is that many areas are more congested than ever before. This is due to the practice of closing camps, barracks, and other spaces and confining the remaining personnel in smaller areas than should be allowed for them. These areas, already too greatly reduced, are further encroached upon by other activities. This practice cannot be too highly condemned from an epidemiological point of view.

Introduction of Susceptibles into an Infected Herd: This is a prime desideratum in experimental epidemiology for the perpetuation of an epidemic. The procedure of introducing small company increments of new (and usually susceptible) recruits at frequent intervals into battalions in which streptococcal infection is prevalent constitutes the ideal condition for building up and maintaining epidemics. The whole procedure with respect to handling recruits should be reviewed, and increments of new recruits should be assembled as fast as possible into battalion units to which new recruits should not be thereafter added during the training period. Each battalion should be handled as a self-contained unit insofar as it is practicable with the facilities necessarily

used in common such as mess halls, moving-picture halls, ship's service stores, gymnasia, etc.

This seeding of units with new recruits is probably one of the most serious breaks in our epidemiological control of the streptococcal respiratory infections.

With the establishment of the epidemiologically sound procedure of "Closed Battalions" in training camps there logically follows the recommendation that when a battalion has been moved out, the vacated living quarters should be thoroughly cleaned, aired, and disinfected before another group is permitted to move in.

Housing Design: The present design of barracks is such that it fosters the spread of epidemic disease. It has been clearly demonstrated that the incidence of streptococcal infections is more closely related to the number of men housed under one roof than to the number of square or cubic feet allotted per man. A maximum of four men per room is the practical ideal arrangement. Simple partitioning of barracks into cubicles leaving a common central corridor is ineffective in reducing incidence of upper respiratory infections. It is realized that such changes in basic design of quarters can only be considered in relation to future construction.

Dust and Bacteria Control: Several recommendations can be made from the results obtained through experiments designed to control dust and bacteria.

Floor dust and bedding lint have been termed the "Environmental Reservoirs" for the hemolytic streptococcus because it has been demonstrated repeatedly that they harbor multitudes of viable organisms which become air borne whenever the dust is disturbed or the bed clothes shaken. Two measures are applicable in this case and are highly recommended:

1. Eliminate completely "dry sweeping" and "steel wooling."

2. The oiling of bedding and decks has "user acceptance" since the oil on bed clothes is hardly noticeable, and oil put on decks soaks in in a few hours. Very rough surfaces (e.g., concrete) and linoleum-covered areas should not be oiled.

Oiling technics are simply a means of immobilizing dust and bacteria that have settled on surfaces. The oil has no bactericidal effect unless a germicide has been added.

(Not Restricted)

The actual killing of bacteria on surfaces and in the air has been accomplished by both physical and chemical means. The ultraviolet radiation of air and surfaces has been effective but is expensive for widespread use. It would be extremely useful in selected spaces such as communicable disease wards of hospitals. Evidence shows that a combination of ultraviolet light and oiling effects a reduction of up to 80 per cent in the air-borne organisms and thereby diminishing cross infections in the spaces where they are employed.

Propylene and triethylene glycols used as aerosols condense in adequate amounts on bacteria in the air to cause their death but do not cause the death of organisms present on surfaces. Optimal activity is exhibited at humidities of from 40 to 45 per cent. The widespread use of glycols has not yet been feasible. The glycol aerosols may be found useful in selected small spaces such as contagious disease wards.

Management During Hospitalization: Patients with upper respiratory infections should be segregated in wards limited absolutely to the care of such cases. Ideally, such wards should offer single-room accommodation with the medical and nursing staff carrying out the appropriate isolation technic. The ward should be managed as one for contagious diseases with no free intercourse among patients.

Should the ideal not be obtainable, then the ward should be cubicled. In the majority of wards where only natural ventilation prevails, the cubicle partitions should not extend to the floor and thereby diminish ventilation. When the patient is clinically well, he should be removed from the ward for acute cases to a ward of similar design which is likewise restricted to patients convalescing from upper respiratory infections. At this stage bacteriological investigation should be carried out to determine whether the patient is harboring hemolytic streptococci in the throat or nose. If the cultures are positive, penicillin should be administered. After two consecutively taken daily cultures are found negative, the patient can be returned to his company with the assurance that "seeding" of his group with virulent organisms from the hospital wards is not occurring.

This management process should not require more than 14 days for each of these patients, and on the basis of statistical studies will, over any extended period, undoubtedly, save the Navy many man days which would otherwise be lost.

Dispensaries and Sick Bay: Many factors with the present design and practice operate to produce cross infections and new cases. Among the more important are:

(Not Restricted)

(a) crowding together of patients in waiting rooms;
(b) indiscriminate use of atomizers with contaminated nasal tips; and
(c) inadequate sterilization of thermometers, medicine glasses, etc.

Recommended Principles:

(a) segregation in waiting rooms of the patients with upper respiratory infections;
(b) staggering of time for sick call for the various activities or divisions of the command; and
(c) proper sterilization.

Mass Chemoprophylaxis: Studies carried out in the Navy on mass prophylaxis using sulfonamides for streptococcal respiratory infections have shown that the practice is not satisfactory. Drug-resistant strains developed under the conditions necessary for the employment of the sulfonamides in mass prophylaxis, and then infections caused by these resistant strains became epidemic. It does not appear at present that mass chemoprophylaxis by other agents now available offers any encouraging promise.

Immunization: Active immunization employing killed whole organisms of prevalent types as well as type-specific antigenic components of the cells has been investigated, but results do not permit hope of early success with this measure as a means of mass protection. However, research along these lines is considered warranted and is being continued.

Passive immunization using gamma globulin has, on the whole, been disappointing.

At the present time, then, the epidemiological approach offers greater hope for successful control than the immunological approach. (Preventive Medicine Div., BuMed)

* * * * * *

(Not Restricted)

Evaluation of Benadryl (Beta-Dimethylaminoethyl Benzhydryl Ether Hydrochloride) in the Treatment of Urticaria, Scleroderma and Allied Disturbances: O'Leary and Farber working in the Section on Dermatology and Syphilology of the Mayo Clinic administered Benadryl to a large group of patients who had dermatoses characterized by cutaneous edema, such as urticaria, acute or early scleroderma, acrosclerosis, and atopic dermatitis.

(Not Restricted)

Acute Urticaria. Benadryl was prescribed to be taken by mouth every three to four hours in doses varying from 50 to 100 mg. for 35 patients who had acute urticaria. Of these 35 patients, 20 were completely relieved in from one to two days. The condition of 12 was improved, meaning that the pruritus receded and that there were fewer and smaller wheals. Three patients were not benefited. Side reactions were experienced by 10 of the 35 patients, but were not severe enough to warrant discontinuance of the use of benadryl, although discontinuance might have been necessary in several instances if recovery from urticaria had not been so prompt.

Chronic Urticaria. This condition may last for many years. In spite of careful investigations the cause of chronic urticaria in most cases remains unsolved. However, it is now possible to give striking palliative relief to most patients who have chronic urticaria. Of the 75 patients who were treated, 48 were entirely relieved while they were taking benadryl, 17 had fewer lesions and less pruritus, and 10 obtained no benefit. Substitution by placebos or discontinuance of therapy resulted in prompt recurrence of the lesions. In 25 patients, or a third of those treated, there were complaints of side reactions of varying degrees to benadryl, but only 8 of these reactions were of sufficient severity to justify discontinuance of administration of the drug.

Atopic Dermatitis. Benadryl was used in the treatment of atopic dermatitis because of the frequent concomitant occurrence of cutaneous edema, white dermographia, hay fever, and asthma.

It is difficult to evaluate the results because benadryl seldom was the only remedy prescribed. Patients who have generalized eczematoid changes usually are instructed to take soothing baths and to use wet dressings, antipruritic lotions and similar measures. Benadryl was prescribed as an adjunct to other forms of therapy for 25 patients who had atopic dermatitis. It relieved severe paroxysms of pruritus for 8 of the 25 patients. Aside from the fact that the drug decreased the severity of paroxysms of pruritus for 8 patients, no other benefits accruing from it were observed.

Pruritus Arising from Other Causes. Benadryl is not an effective antipruritic drug. It afforded relief to only 6 patients out of 38 who suffered from itching arising from various causes, such as contact dermatitis, jaundice, toxic pruritus, psoriasis, dermatitis herpetiformis, so-called neurogenic pruritus, and the like.

Scleroderma and Acrosclerosis. Benadryl was administered by mouth in amounts varying from 200 to 800 mg. a day to 9 patients who had acrosclerosis and to 4 who had scleroderma. A chief complaint of the acrosclerotic patients was their inability to flex their fingers or to make a fist.

(Not Restricted)

During the first two weeks of therapy 7 of the 9 patients who had acrosclerosis were able, because of the rapid disappearance of edema from their hands, to bend their fingers and to make a fist, and there was a decrease in the cutaneous edema of two of the 4 patients who had scleroderma. Sustained benefit, however, was achieved for only two of the 9 patients who had acrosclerosis. Of the two patients who obtained sustained symptomatic benefit from benadryl, one was a sixty-five year old woman who complained primarily of stiffness and swelling of her hands. After benadryl therapy alone, increased mobility of her hands developed. She remained without pain or swelling of her extremities for five months, at the end of which period she discontinued therapy. In a short time the swelling, cyanosis, and pain returned, but with the resumption of benadryl therapy she again gained symptomatic relief. At the date of this report she is still doing well. She has had a total of seven months of treatment.

The second patient with acrosclerosis who improved markedly was a twenty-four year old waitress who complained of stiffness and swelling of her face, chest and hands. Small painful ulcers were present on the tips of her fingers. To the time of this report, she has received 500 mg. of benadryl a day for six months. At the present writing the ulcers are healed, the patient is able to make a fist, softening of the skin in the affected areas has ensued, and she is now able to work.

Toxicity. Side reactions of varying degrees developed among 58 (31 per cent) of the 186 patients who received benadryl. The side reactions in order of frequency were drowsiness, dizziness and dryness of the mouth. Some patients complained of being "jittery," "on edge," "nervous," "confused," "poorly co-ordinated," "nauseated," and "excited."

Side reactions usually occur during the first few days, and frequently diminish in severity or disappear entirely after several weeks of therapy. "Late" side reactions developed among only 10 patients. These occurred for the first time after several months of the daily use of benadryl. Side reactions promptly disappear after discontinuing administration of the drug. Ten patients were not able to use benadryl because it apparently caused unusually severe dizziness and drowsiness.

Comment. Treatment of urticaria and allied dermatoses should begin with small doses of benadryl, such as 50 mg., administered three times a day. The amount should be increased gradually until the minimal maintenance dose has been determined. Some patients may require as much as from 300 to 400 mg. a day for several weeks, but frequently are able to decrease the amount gradually until smaller dosages become equally effective.

(Not Restricted)

Benadryl does not seem to have cumulative action, for urticarial lesions promptly reappear when administration of the drug ceases. If relief is not obtained within the first few days, benadryl is unlikely subsequently to be of value, and administration of it should be discontinued. In eleven months' experience with benadryl by these workers, no manifestation of cutaneous sensitivity was observed, nor was there any evidence that benadryl is a habit-forming drug. Benadryl has a wide margin of safety and can be taken for many months in succession without deleterious results. It is just as effective in controlling urticaria in the fourth or fifth month of use as it is in the first.

Indiscriminate use of benadryl should be discouraged because severe side reactions, such as loss of judgment, confusion, or the sudden onset of drowsiness, sometimes occur. (Proc. Staff Meet. Mayo Clinic, Aug. 7, '46)

Note: Previous issues of Bumed News Letters containing notes on benadryl: August 16, April 26, and February 1, 1946.

* * * * * *

(Not Restricted)

Treatment of Basal Cell Epithelioma by Injection of Tissue Extracts: Extensive research work has been done in an effort to find a successful treatment of cancer by methods not involving fulguration, excision, x-rays, radium, etc.

Based upon previous studies of their own and others, Amersbach, Walter, and Sperti, working in the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University, undertook the treatment of basal cell epithelioma with extracts of spleen and liver in a series of 21 cases.

Normal human spleens and livers were collected at autopsy from the bodies of persons who had died suddenly as a result of accident or heart disease not more than 24 hours previously.

The liver and spleen extracts were prepared and administered separately, once weekly, as intracutaneous infiltrations around the proven cancerous lesions in amounts varying from between 0.25 c.c. and 2.0 c.c.

Of the 21 patients treated, the lesion of one patient who received the spleen extract failed to respond. Of the other 20 patients, 14 continued the treatment until complete regression of the lesion (as observed clinically and as shown by final biopsy) had resulted. The other 6 patients are still under treatment, but all of them have shown definite regression of the lesion. In some of the patients whose treatment has been completed, the cosmetic result is excellent,

(Not Restricted)

with no scar visible; in others, there is a scar similar to that resulting from excision and its characteristics are probably dependent on the amount of ulceration originally present. Four of the patients were first used as controls and given injections of a dextrose solution (275 mg. per c.c.) which was chosen because of the successful use of dextrose solutions in sclerosing varicose veins and because it was realized that the favorable effects produced might be non-specific in character. All of these 4 patients failed to respond to the injections of dextrose; they were subsequently transferred to treatment with injections of spleen or liver extract, whereupon the lesions began to regress. In two cases the regression was rapid; seven treatments for one, and three for the other were required. Lesions in the other two of these 4 cases have been much slower to regress and have required a relatively large number of injections.

Of the 21 patients, 7 received liver extract and 14 spleen extract. It is difficult to state whether or not the spleen extract is more effective than the liver extract, for the size, type, and location of the lesion, and the general physical status of the patient varied greatly. In general, it appeared that the spleen extract produced a faster reaction than the liver extract.

The number of injections required to cause complete regression varied greatly. One patient required only three injections, several only six injections, and some as many as twenty. It was noticed that in areas which could be infiltrated easily with 1 c.c. of extract, the lesion responded much faster than in those around the eyes and on the nose. In the latter areas generally a smaller quantity of extract was used per injection, but the response was much slower even when the total quantity of extract used was the same as that employed in treating lesions which received a larger amount per injection. It seems that a definite minimum dose per injection is required. Also, patients who were more regular in their treatments generally responded faster.

It is likely that the composition of the extracts varied, for several different preparations were used during the course of treatment, and, although the same method of preparation was rigidly followed and only healthy tissue was used, there were probably individual variations in the tissue employed for the preparation of successive extracts. In the early part of the work the spleens and livers were often from cadavers of young persons, but recently the tissue has been almost wholly from middle-aged and older persons. The effect of the variations in the source of the tissue used is not known and should be investigated.

The lesion usually responded noticeably after the third or fourth injection, when there was a definite shrinking. In several cases the lesion appeared to

(Not Restricted)

regress by 50 per cent during one week between injections. A crust was generally present at some time during the regression of a lesion; in some cases the crust was thin and was replaced a number of times until the healthy tissue was finally revealed. In other cases the crust produced was dense and adhered firmly to the lesion for a number of weeks.

The extract seemed to have no effect on normal tissue, for only the lesion was affected although the surrounding normal tissue was infiltrated at each injection. In the case in which treatment failed, there was no noticeable change in the lesion or the surrounding tissue. Injection of spleen and liver extract into normal skin in other areas resulted in no toxic effect with the spleen extract but a slight reaction with the liver extract. Since both extracts were active in producing regressions of the epitheliomas, it seems that the active factor is probably not toxic to normal tissues.

In none of the cases observed since completion of the treatment, have there been any signs of recurrence in the period of one to two years. However, it is too early to make any definite statement regarding recurrence, and the patients will be examined regularly over a period of at least five years. (Arch. Dermat. and Syph., Aug. '46)

* * * * * *

(Not Restricted)

Further Studies on the Effects of Tissue Extracts on Staphylococcus Aureus: Chromogenesis and other characteristic activities of bacteria take place only when their environment is favorable. Conversion of the virulent normal Staphylococcus aureus with S (smooth) yellow colony to the avirulent state with white R (rough) colony configuration by providing unfavorable conditions for growth with the addition of certain dyes and salts to the media has been demonstrated. This modification was shown to be temporary, and passage in vivo inevitably effected the reversion of the variant (R) form to the original normal (S) type of colonial growth.

Recently, work in the laboratories of the authors has shown that when brain or spleen extract is incorporated in the media, the yellow S form of Staph. aureus is converted to the white R form and is so maintained in repeated subcultures on this same media. Moreover, conversion from S to R in vivo has been produced by injection of brain extract into animals infected with the yellow S organism. It was these findings which led the authors to conduct the present more extensive investigations on brain and spleen extracts, as well as on heart and kidney extracts. The studies included (a) determination of the pathogenicity of the R variant of Staph. aureus; (b) the prevention and treatment of staphylococcic infections with the various

(Not Restricted)

extracts, using different methods of inducing infection and of administering the extracts; (c) a study of the mechanism of the action of the extracts both on the production of toxin by the organism, and on the toxin; and (d) determination in mice of the acute and chronic toxicities of the extracts.

Summary of Results: The ability of alcohol-precipitated extracts of beef tissue (brain, spleen, heart, and kidney) to stimulate the growth of Staph. aureus, in vitro, and to convert the yellow S form to a white R variant with altered biochemical characteristics conforming to those of an avirulent organism, has been confirmed. The avirulence of the white R variant thus produced has been established by tests in vivo on mice.

Staph. aureus infections induced subcutaneously, intraperitoneally, and intravenously in mice showed a favorable response to brain extract administered subcutaneously or orally. The mortality was 2 per cent in 444 experimental animals and 81 per cent in 448 control animals.

The extracts appeared equally efficient when used therapeutically (mortality 2 per cent of 162 experimental animals and 90 per cent in the control series) or prophylactically (mortality 2 per cent of 282 experimental animals and 76 per cent in 286 control mice). Extracts of brain and spleen were more effective than those of either heart or kidney.

Studies concerning the mechanism of action of the tissue extracts indicate that they prevented the formation of toxin by Staph. aureus, and had but little effect on the action of toxin.

Toxicity tests in mice revealed that the brain and spleen extracts were relatively nontoxic, dosages equivalent to 2 per cent of the body weight being well tolerated. Kidney and heart extracts were much more toxic, producing mortality in the test animals in dosages as low as 0.3 per cent of the body weight. (J. Exper. Med., Sept. 1, '46 - Nutini and Lynch)

* * * * * *

(Not Restricted)

Report on Studies of the Stability of Fibrin Foam and Thrombin: The dating period for human fibrin foam and thrombin has hitherto been set at two years because of the lack of adequate information as to the stability of these products over a long period of time. Further evidence from recently completed studies would appear to justify a considerable extension of the dating period.

(Not Restricted)

Fibrin foam preparations made in the last two and one-half years have been repeatedly used clinically, and no evidence of deterioration of quality with time has been indicated. For this reason it is considered that no special problem exists as to the stability of fibrin foam. With thrombin, however, the problem of stability has required more careful investigation.

Samples of dried thrombin taken from Navy lots, therefore, have been tested by heating them in an oven at 50° C. for periods now extending in some cases somewhat beyond two years.

The results from the studies carried out indicate that for periods up to about one year, there is practically no loss of thrombic activity when thrombin is kept heated at 50° C. The variations in activity recorded during this period of testing are nearly all within the limits of experimental error. At the end of heating at 50° C. for two years, there is marked deterioration of some lots although others appear to have retained practically their full initial potency.

Therefore, it may be stated that at 50° C., dried human thrombin is stable for a period of at least a year but is not always stable for a period of as long as two years. Allowing for the ordinary temperature coefficients of most chemical reactions, this would appear to indicate that dried thrombin should be stable for a period of at least five years at room temperature, and for twenty-five years or more if stored at 0° C. (Special Report to Chief, BuMed, by E. J. Cohn, of Dept. of Physical Chemistry, Harvard Medical School, on studies made by J. T. Edsall)

* * * * * *

(Not Restricted)

Changes in Liver Function During Experimentally Induced Human Hepatitis: During studies of experimental human hepatitis twelve cases were studied at close intervals by means of liver function tests. The tests were followed from normal control values to abnormal results during the disease, and then back to normal. The bromsulphalein, urine bile, urobilinogen, serum bilirubin, serum phosphatase, and cephalin-cholesterol tests rapidly became abnormal following the onset of symptoms. As the damage developed quickly, it was difficult to choose the most sensitive tests for detecting functional changes, although the bromsulphalein and urine bile tests seemed to be the most sensitive methods. The oral hippuric acid test did not become abnormal in the cases in which it was studied.

One of the twelve cases of infectious hepatitis was subicteric and three showed only a very slight icterus. In these subjects the serum bilirubin, urobilinogen, and urine bile tests showed only a slight change from normal.

(Not Restricted)

In such instances the cephalin-flocculation and bromsulphalein retention tests gave more reliably an index of hepatic dysfunction.

The changes in the serum phosphatase, bromsulphalein, and serum bilirubin values usually returned to normal before those of other tests, whereas the urobilinogen and urine bile tests generally suggested hepatic dysfunction for a longer period of time. However, in most cases the cephalin-cholesterol test indicated the longest duration of hepatic dysfunction. Some of the tests which first indicated changes in hepatic function did not show as long a duration of abnormal function as did other tests. This is particularly true of the bromsulphalein test. (Yale J. Biol. and Med., May '46 - Drill)

* * * * * *

(Not Restricted)

Phase Microscope: Under the direction of A. H. Bennett the laboratories of the American Optical Company have devised a way to transform an ordinary microscope into an instrument that extends the range of human vision. A newly developed light-controlling diffraction plate is placed in an objective lens system. The plate makes detail within a specimen visible by increasing, reducing, or reversing contrast in the image formed by the microscope. Equipment required to transform a standard light microscope into a phase microscope consists of a diaphragm to control light concentrated on a specimen and one of the new diffraction plates placed in the objective lens system. An auxiliary telescope used in place of the microscope eyepiece is helpful in centering the equipment. This fundamental advance is called phase microscopy; hence the converted instrument is a "phase microscope." It should now be possible to observe and study many living microorganisms, cells, tissues, and industrial materials so transparent that heretofore, little or no detail in them could be seen. (New York Times, Sept. 1, '46)

* * * * * *

(Not Restricted)

Reports on Research Projects:

X-489
Report No. 1
1 May '46

Tests on the H. E. Jones "Thermit" Stirring-Rod Heater.

This stirring rod heater was tested at the request of the Bureau of Medicine and Surgery to determine its practicability as a device for heating liquids or solid foods where the usual sources of energy are not available.

The device consisted of a steel container, 4.5 in. in length and 0.75 in. in diameter, filled with a thermit mixture.

(Not Restricted)

Reports on Research Projects (Cont.):

X-480 (Cont.)

The container was stoppered with a drilled wooden plug which carried a wire connected to pull match for igniting the mixture. Two types of heaters were supplied.

Twenty samples of these heating rods were tested by immersing them in a measured volume of water, up to or partially covering the wooden plug, immediately after activating the pull match. The device was kept in motion to insure a uniform distribution of heat until there was no further increase in the temperature of water. Total burning time, which was considerably less than immersion time, was measured with a stop watch.

Of the twenty devices tested, ten of the heating tubes failed to ignite and four of the remaining ten had defective containers. The average experimentally determined heat output of the units that functioned was less than 40 per cent of the rated value as given by the designer.

In its present form the Jones device is unsatisfactory as a source of energy for heating liquids or foods. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - King et al.)

(Restricted)

X-184
Rep. No. 13
1 May '46

Food Supplies, Messing and Native Feeding at Advanced Bases in the Pacific, 8 December 1945 to 1 March 1946.

This survey of foods and messing at advanced bases was undertaken at the request of the Bureau of Supplies and Accounts to attempt to learn what steps could be taken to assist those in charge of food supplies and messing during the difficult transition from a war to a peacetime Navy. In endeavoring to evaluate production at that time and to foresee research needed to insure future supplies, the following observations were made:

The heavy infestation with weevils of large supplies of flour assembled at supply depots was causing trouble. Very limited supplies of fresh vegetables were being received at advanced bases at the time of these observations. Perishable products, such as shell eggs, were being lost because of damage in transit and growth of molds.

(Restricted)

X-184 (Cont.) Messing operations and maintenance of sanitation at advanced bases were suffering due to the demobilization of experienced cooks, bakers and commissary officers. Officers' messes were suffering chiefly from the poor morale of the kitchen help. The need for the evaluation of the training and handling as well as the type of labor is evident.

Galleys of diverse design are in operation. The general experience should be the guide for the planning of the best galley for standard construction in the future. Equipment at galleys was deteriorating from lack of skilled maintenance. Weaknesses in galley equipment indicated the need for a continuous research program to improve baking ovens, stoves, mixers, steamers, and coffee urns. In some cases small items, such as cutters for butter, would effect savings in food. There seemed to be a marked increase in galley accidents, such as the loss of fingers in machines for slicing and grinding.

Food rationing for natives, especially at Okinawa, was suffering from a shortage of basic foods, such as rice, to which these natives are accustomed. Although the allowance of calories was low, the quality of the diet was fair because, in many cases, of the issue of supplies of canned meats. Numerous wild or semi-wild products were proving to be useful supplements to native diets especially at Okinawa.

The messes for native laborers in the Philippines and at such island bases as Kwajelein provided a diet consisting largely of rice, bread and canned meat. This was proving satisfactory since most of these natives ate part of their meals at home. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - McCay)

(Not Restricted)

NMRI-163 21 May '46 Toxicity of Snake Venom (Trimeresurus Flavoviridis) and Antidotal Effectiveness of Antivenins.

Solutions of the dried venom from Trimeresurus flavoviridis (said to be a highly poisonous and common snake on Okinawa) were injected intravenously and intraperitoneally in young Albino Swiss mice in order to determine its toxicity.

(Not Restricted)

Reports on Research Projects (Cont.):

NMRI-163 (Cont.)

From the results obtained and based upon the general consideration that mice are more resistant to toxic agents than are human beings, it would appear that Trimeresurus flavoviridis venom is at least as toxic or more toxic than rattlesnake venom.

After mice were injected with 3.6 mg./kg. (LD-100) of Trimeresurus flavoviridis venom, they were immediately treated intravenously with various dilutions of Nearctic Crotalidae antivenin (Supply Catalog, Med. Dept. U.S. Navy, SI 812) and Bothropic antivenin (SI 810) in the same volume as the solution of venom administered. From the results obtained, it was apparent that Neartic Crotalidae was superior to Bothropic in combatting the effects of Trimeresurus flavoviridis venom. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Stormont)

(Not Restricted)

X-671 (Av-353-p) 28 May '46

Study of Visual Acuity Targets.

The object of this study was to determine the reliability of several visual acuity test targets. One hundred and twenty subjects were tested and retested on six visual acuity tests. The reliability of each test was computed, using the test-retest correlation. Differences in reliability were evaluated by usual statistical procedures.

The Ortho-Rater showed the highest reliability. This superiority was statistically significant at the five per cent level. The Peckham, or Random Order test was the least reliable test at the five per cent level of statistical significance. (Med. Field Res. Lab., Camp Lejeune, N.C. - Mueller and Richmond)

(Not Restricted)

X-672 (Av-354-p) 11 June '46

The Effect of Glasses, Sun, N-1, on Visual Acuity at High Brightnesses.

The object of this study was to determine the effect of glasses, Sun, N-1, on visual acuity at high brightnesses.

(Not Restricted)

X-672 (Cont.)

Observations were made to determine the minimum size of an object which can be seen when silhouetted against the sky. Measurements of visual acuity (as measured by this minimum visible angle) taken under normal conditions were compared with similar determinations made while wearing sunglasses, N-1.

At brightnesses of 1000 millilamberts or more, over 400 observations were made of thin wire targets, and over 900 of small square targets.

Results showed that the threshold for thin wires was 0.43 seconds of arc, and that the threshold was unaffected by the use of sunglasses. The threshold for square targets was 14.2 seconds of arc under normal conditions, but was increased to 16.9 seconds when the sunglasses were used. This change may be a result of (1) small imperfections in the optical properties of the plastic lenses, or (2) reduction in brightness by the plastic filters. Since most studies of the relationship between visual acuity and background brightness reveal that visual acuity changes very little with changes in brightness above about 100 millilamberts, and since the effective brightness of the sky when seen through the sunglasses was still above this value, the first hypothesis may be correct. (Med. Field Res. Lab., Camp Lejeune, N.C. - Hecht et al.)

(Not Restricted)

X-650 Rep. No. 1 18 June '46

A Study of Oral Penicillin Preparations for Possible Use as Prophylactic Agents against Streptococcal Disease.

Trisodium citrate buffered penicillin tablets were found to be the best of 13 oral penicillin preparations studied and about twice as effective as nonbuffered preparations.

A dose of 100,000 units of oral penicillin was found to be the most satisfactory as judged by serum level studies. Given before each meal and at bedtime, this dose, in the majority of individuals, can be expected to maintain an effective penicillin serum level of 0.04 units per c.c. for from 8 to 12 hours. This level should be adequate for prophylaxis against streptococcal diseases.

Subjects were found to vary consistently in the serum level response to different oral penicillin preparations and, in general, they may be classified as good, average or poor responders.

(Not Restricted)

Report on Research Projects (Cont.):

X-650 (Cont.) Oral penicillin in the dosage outlined was relatively innocuous and produced no serious toxic reactions. It should be an effective prophylactic agent against streptococcal diseases. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Clausen and Comploier)

(Not Restricted)

X-697 (Gen. 149) Rep. No. 1 23 July '46 Study on the Occurrence of Dental Caries in the Same Surfaces Either Bilaterally and/or Adjacently.

In this study, the teeth of 580 Marine recruits whose average age was 21.23 years and who had had no previous dental service were examined by posterior bitewing roentgenograms and then clinically by mirror, explorer, and air.

It was observed that (1) in adjacent tooth surfaces, when one tooth surface was involved by caries, the adjacent surface was involved in 75.44 per cent of the teeth studied; (2) in bilaterally symmetrical tooth surfaces, when a surface on one side was involved, the same surface on the opposite side of the dental arch was involved in 61.99 per cent of the teeth studied.

Of 7,354 pairs of adjacent surfaces studied, 49.85 per cent were caries free; and of 11,513 pairs of bilaterally symmetrical surfaces studied, 44.31 per cent were caries free. (USMC Base, San Diego, Calif. - Losee)

Note: Those interested in seeing copies of the complete reports should address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the authors. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to those reports marked "Not Restricted" in the same way as to published articles noting authors, title, source, date, project number, and report number.

* * * * * *

(Not Restricted)

Note on Specialist Training and Training Opportunities Now Available: It has been noted that many medical officers are applying for specialized training prior to obtaining the basic training needed for specialization. A medical officer should have two years of general surgical experience before starting specialization in Orthopedic Surgery, Plastic Surgery, or Urology, and three years of General Surgery is required if he desires to specialize in Neurosurgery.

It has been necessary for the Advisory Board to disapprove a number of applications for specialty training in civilian institutions because the candidate failed to meet the basic training requirements preliminary to specialization.

To date, 64 medical officers have been ordered to residency-type training in various Naval hospitals. At present there are vacancies in all the specialties except in Obstetrics and Gynecology. Requests are desired for Anesthesiology, Dermatology, Internal Medicine, Pathology, Ophthalmology, Otolaryngology, and Urology.

Residencies, Courses, and Fellowships in Pathology: The Council on American Education and Hospitals of the American Medical Association and other recognized authorities regard the autopsy rate and the performance of well conducted autopsies to be an index of professional interest and qualifications. All surveying authorities place much emphasis upon the professional qualifications of the pathologists in any medical institution. In order to enable the Medical Corps of the Navy to maintain the highest possible standards, the Bureau is placing emphasis on training in Pathology. In addition to several available residencies, there are several courses and fellowships available in civilian institutions. There is also one teaching fellowship in Pathology available at the University of Michigan beginning 1 November 1946. Applications are desired from medical officers for training at any level in Pathology. Applications must contain an agreement not to resign during the course and to remain in the Navy for a period of three years after the completion of the course, and may be made by dispatch if outside the continental limits of the United States.

Training in Submarine Medicine and Deep-Sea Diving: In amplification of Alnav 474, regarding training in deep-sea diving and submarine medicine, it is pointed out that during the period when training is conducted aboard a submarine, students receive submarine pay. When students are undergoing training at the Deep-Sea Diving School, Washington, D. C., they receive additional diving pay. Physiology is a major subject in this specialized field of medicine. Because an increased knowledge of physiology is required in most medical research, medical officers who desire fundamental training in medical research will find this training and instruction to be of considerable benefit to them. Outstanding students are often given research problems as part of their training. Certain assignments in submarine medicine permit the officer to receive additional submarine pay.

(Not Restricted)

Ophthalmology Course: The Bureau of Medicine and Surgery announces the availability of a four months' intensive course in Ophthalmology for a quota of one at the Northwestern University beginning 17 February 1947. This is a beginning course in Ophthalmology and will include the anatomy, pathology, and physiology of the eye. This course will be accepted by the American Board of Ophthalmology. It is given by Dr. Derrick Vail. It is planned that the medical officer receiving this course will continue duty under instruction or residency-type training in a Naval hospital upon the completion of the course. Applications are desired to reach BuMed prior to 1 December 1946 and must contain an agreement not to resign during the course and to remain in the Navy for a period of one year after the completion of the course.

Fellowship in General Surgery: An excellent fellowship in General Surgery at the second-year residency level of twelve months' duration will become available on 1 January 1947. This fellowship is an addition to those included in the 30 August 1946 issue of the Bumed News Letter. According to present arrangements, which are not yet complete, the officer will be enrolled at the Northwestern University Medical School and will receive his training at Cook County Hospital, Chicago, Illinois, under the tutelage of Dr. Karl Meyer. Previous training and experience will be a requirement. Applications for this fellowship should reach BuMed prior to 1 November 1946 and must contain a signed three-year clause. Applications may be made by dispatch if outside the continental limits of the United States.

Course in Physical Medicine at Mayo Clinic: The Bureau announces a twelve months' fellowship in Physical Medicine at the Mayo Clinic beginning 1 January 1947. No previous training or experience is necessary, but the medical officer assigned to this training will be required to remain in the Navy for three years after completion of this training. Applications are desired to reach BuMed prior to 1 November 1946, and may be made by dispatch if outside the continental limits of the United States.

Course in Broncho-Esophagology: The Bureau has available a course in Broncho-esophagology (formerly bronchoscopy) of eight months' duration at the Jefferson Medical College, Philadelphia, Pa. The medical profession as a whole regards training and experience in Otolaryngology as a preliminary requirement for Broncho-esophagology. However, this course is open to general surgeons (particularly chest surgeons), internists who specialize in gastro-enterology, and those interested in peritoneoscopy, as well as oto-laryngologists. This course is given under the guidance of Dr. Louis H. Clerf, an outstanding authority in Broncho-esophagology. Requests must contain an agreement not to resign during the course and to remain in the Navy for a period of three years after the completion of the course.

(Not Restricted)

Course in Electro-Encephalography: A 6 months' course in Electro-encephalography to be given at the National Naval Medical Center is available. The course will include neuro-anatomy, neuro-physiology, electronics, interpretation of electro-encephalograms, and instruction in the operation and maintenance of a 6-channel electro-encephalograph. This important field offers many research possibilities.

Applications are desired from regular medical officers. No service agreement is required. It is contemplated that medical officers trained in this field will be associated with hospitals having a large number of neurological and neuro-psychiatric patients. Medical officers who have had previous training and experience in psychiatry are also eligible for this training.

Fellowships in Neuro-Psychiatry: Two fellowships at the University of Illinois, College of Medicine, Chicago, Illinois, are available for advanced training in Neuro-psychiatry. It will be necessary for applicants to have had previous training and experience in neuro-psychiatry. Applications must contain an agreement not to resign during the course and to remain in the Navy for a period of three years after the completion of the course.

Residencies in Neurology and in Neuro-Psychiatry: There are two residencies in Neurology and four in Neuro-psychiatry available at the National Naval Medical Center, Bethesda, Maryland. Requests for these residencies are desired. (Professional Div., BuMed)

* * * * * *

(Not Restricted)

Navy to be Represented at A.D.A. Meeting: Rear Admiral Alexander G. Lyle, (DC), USN, Assistant Chief of the Bureau of Medicine and Surgery for Dentistry, will represent the Navy as a delegate to the House of Delegates of the American Dental Association which meets in Miami, Florida, October 14, 15, and 16. Captain Francis G. Ulen, (DC), USN, who recently received orders to be the General Inspector for Dentistry, will attend the meeting as alternate. Captain Clemens V. Rault, (DC), USN, Dental Officer-in-Command of the Naval Dental School, National Naval Medical Center, will be the representative of the Naval Dental Corps at the meetings of the Council on Dental Education. This is especially appropriate since the Naval Dental School has been recognized as an accredited school for postgraduate dental instruction.

It is expected that many important matters pertaining to service dentistry will be considered at this meeting. (Dental Div., BuMed)

* * * * * *

(Not Restricted)

U.S. Naval Hospital at Houston, Texas Placed in Commission: The U.S. Naval Hospital at Houston, Texas, was placed in commission in a colorful ceremony on September 4, 1946. A $9,000,000 institution consisting of 37 buildings containing 1,000 beds and covering 118 acres, the hospital embodies the latest and most modern features in design, construction, and equipment.

In a brief address, the Surgeon General, Vice Admiral Ross T. McIntire stated, "We cannot afford to be shortsighted and neglect research just because the shooting is over," and added that the Naval Hospital at Houston would become a research center for plastic surgery and the treatment of tropical diseases.

* * * * * *

(Not Restricted)

Naval Dental Research: Dental research in the Navy has progressed considerably since its inauguration at the U.S. Naval Dental School in 1939. Much effort has been directed toward stimulating dental officers in the indoctrinational classes to conduct problem investigations. Methods of procedure and types of investigation toward which they might direct their attention were described, reviewed, and supplemented with professional exercises. This educational procedure is still being used at the U.S. Naval Dental School with emphasis on stimulating naval dental research in the field.

On 29 October 1942, a dental facility for research was established at the U.S. Naval Medical Research Institute. Besides engaging in dental research, this facility offers to individual investigators assistance of various kinds with special problems which confront them wherever they may be stationed. Credit for the original idea in any study is assured. All proposals for dental research or assistance in a research project are reviewed in the office of the Assistant Chief of the Bureau for Dentistry, the Research Division, the U.S. Naval Dental School and the Dental Facility of the U.S. Naval Medical Research Institute.

On 24 July 1946, further organization of naval dental research was initiated and integrated with the establishment of a dental section in the Research Division, Bureau of Medicine and Surgery.

Original research in any dental subject is encouraged. Officers and enlisted men are invited to submit proposals for investigation. Those who wish to conduct an investigation of any kind in dentistry should request further information from the Chief of the Research Division, Bureau of Medicine and Surgery, Washington, D. C.

(Not Restricted)

In the early part of this year dental officers were assigned to Naval Medical Research Unit #2 in Guam, M.I., and Naval Medical Research Unit #3 in Cairo, Egypt. Other dental research centers and expansion are contemplated.

It is interesting to note that approximately 100 dental investigations of all kinds were undertaken at numerous stations by the Navy during hostilities. Of these, about ten were fully supported by funds designated for research by the Bureau of Medicine and Surgery. They included studies in submarine dentistry, aviation dentistry, the application of therapeutic measures (sulfa drugs and penicillin) to oral diseases, and many devices to supplement the treatment of the wounded. At the present time the following dental research is being carried out:

Guam, M.I. (1) Survey of the oral condition of natives with emphasis on dental caries and soft tissue lesions. (2) Color photo records of oral manifestations of general disorders. (3) The possibilities of establishing a dental organization for training selected natives to become practitioners in dentistry.

Cairo, Egypt. (1) Effectiveness of hot oil sterilization of dental instruments for controlling excessive corrosion caused by desert conditions. (2) Color photos of oral manifestations of oral lesions for the Oral Pathology Department, U.S. Naval Dental School.

San Juan, Puerto Rico. (1) Effect of unusual habits of eating citrus fruits upon the dental enamel of natives.

U.S.S. IOWA. (1) Increase of clinical dental caries over a one-year period in the same individuals.

U.S. Naval Dental School. (1) Studies on dental amalgam. (2) Oral bacteriology. (3) Improved dental record. (4) Oral pathology (through recently established archives of oral pathology). (5) Dental educational procedures. (6) Hand and eye prosthesis. (7) Preventive dentistry.

Dental Facility, U.S. Naval Medical Research Institute. (1) Effect of oxalates in a caries-producing diet on the teeth of white and cotton rats. (2) Factors involved in dental calculus formation. (3) Improved recording methods for better identification of dead bodies by means of the teeth. (4) Embedding procedure for sectioning combined hard and soft tissues without decalcification. (5) Hardness studies on human teeth. (6) Applicators for

(Not Restricted)

oral refrigeration anesthesia and development of a practical apparatus. (7) Dental research methods and dental statistics accounting.

Pearl Harbor, T.H. (1) Study of dental caries involving personnel at sugar plantations. (Dental Div., BuMed)

* * * * * *

(Not Restricted)

Public Health Foreign Reports:

Disease	Location	Date	No. of Cases
Cholera	China, Chekiang Prov.	July 1-31, '46	238 (41 fatal)
	Fukien Province	July 11-20, '46	114 (37 fatal)
	Kiangsu Province	July 11-31, '46	666 (36 fatal)
	Kwangtung Prov.	July 11-31, '46	89 (14 fatal)
	Formosa	June '46	136
	Indochina (French)		
	Cambodia	July '46	109
	Manchuria	June 20-July 31, '46	1,997 (702 fatal)
Plague	Belgian Congo	Aug. 16, '46 (date rep.)	6 (4 fatal)
	China, Fukien Prov.	July '46	110 (28 fatal)
	Kwangtung Prov.	June 21-30, '46	23 (14 fatal)
Smallpox	Indochina (French)		
	Cambodia	July '46	307
Typhus	Ecuador	July '46	105 (9 fatal)
	Morocco (French)	July 21-Aug. 10, '46	87
Yellow Fever	Colombia, Santander Dept., La Girona, Lebrija	June 10-July 28, '46	1 (fatal)

(Pub. Health Reps., Sept. 6 and 13, '46)

* * * * * *

(Not Restricted)

Changes to be Made in Copies of Manual of the Medical Department: Certain changes in the Manual of the Medical Department have been directed as specified in: Alnav 503, page 29; Circular Letter 46-134, page 31; and Circular Letter 46-135, page 31.

ALNAV 503 4 September 1946 (Not Restricted)

Subj: Physical Qualification Standard re Syphilis Modified

The last sentence of paragraph 2183, Manual of the Medical Department, (standards for appointment of enlisted men to warrant or commissioned rank and of warrant officers to higher rank) is modified as follows: any clinical or serological evidence of active or latent syphilis during the past two years, or of central nervous system at any time, is disqualifying for appointment.

--SecNav. James Forrestal

* * * * * *

ALNAV 509 9 September 1946 (Not Restricted)

Subj: Report on Status of Routine Chest X-ray Exams

In order to obtain a sample of the number of Navy and Marine Corps personnel who have received routine roentgenographic or photofluorographic examinations, report the following data to BuMed by mail. Total number Navy and Marine Corps personnel on board as of 15 September 1946. Total number of personnel whose surname begins with letter "C" or "T." Total number whose surname begins with letter "C" or "T" who have received routine roentgenographic or photofluorographic examination of chest in previous twelve months.

--SecNav. James Forrestal

* * * * * *

(Not Restricted)

Re Operation of Dishwashing Machines and the Replacement of Thermostatic Switches: The attention of all Medical Department personnel concerned with this subject is called to Circular Letter 46-1810 on page 101 of the Navy Department Semimonthly Bulletin of 31 August 1946.

* * * * * *

(Not Restricted)

Disestablishment of Naval Medical Activity: As published in the Navy Department Semimonthly Bulletin of 31 August 1946, the following Naval Medical activity was disestablished as of the date shown:

Name	Location	Date of Disestablishment
U.S. Naval Hospital	San Leandro, Calif.	1 September 1946

Circular Letter 46-133 13 September 1946 (Not Restricted)

To: All Ships and Stations

Subj: Professional Blood Donors, Payment for Services; Bureau Policy Concerning.

Ref: (a) Manual Medical Dept., U.S. Navy (1938 Edition), Chapter 20, Section IV, #3050, (b).

Encl: 1. (HW) Blood Donor Registration Card
2. (HW) Criteria for Blood Donors, Male
3. (HW) Criteria for Blood Donors, Female

1. The Bureau encourages volunteer blood donor programs provided the proper organizational set-up can be established. The procedure in effect at the National Naval Medical Center and approved by the National Institute of Health is satisfactory and requires the following steps:

(a) Obtain proper history of the donors
(b) Make physical examination of each donor
(c) Obtain a signed release from each donor

Enclosures 1, 2, and 3 are samples of forms used at the National Naval Medical Center.

2. If volunteer blood is obtained from members of volunteer blood donor organizations, the naval activity must be certain that no obligations are attached to such donations.

3. Reference (a) provided: "Payment for services of blood donors who are members or former members of the military or naval service shall be made at the rate of 5 cents for each cubic centimeter of blood donated; minimum payment $10; total payment not to exceed $50 for one transfusion. (See 24 U.S.C. 30)."

4. The Act of 30 July 1941, in amendment of prior law, extends the restriction of $50.00 for one transfusion to "any person, whether or not in the employ of the United States."

5. Where blood cannot be obtained by donation, payment may be made therefor in such unit amount as will not exceed the costs stated in the Manual of the Medical Department or the maximum payment specified in law.

--BuMed. Ross T. McIntire

Note: Enclosures (which were sent to all addressees) are not reprinted in BNL.

Circular Letter 46-134 9 September 1946 (Not Restricted)

To: All Ships and Stations

Subj: NAVMED-582 (Monthly Morbidity Report); field use of.

Ref: (a) MMD Par 35D3.2 (Revised by CirLtr 46-90, 11 Jun 1946)

1. In order that a more efficient use may be made of subject form in the field, it is directed that an additional copy (third copy) be prepared by each medical activity, and that this added copy be forwarded each month to the cognizant District Medical Officer or to the Staff Medical Officer in each instance where the local activity is part of an organization having a Staff Medical Officer attached.

2. To conform with this, the following change is directed in ref (a):

> Delete the sentence, "An additional copy shall be forwarded to the cognizant senior medical officer, ashore or afloat, whenever required by him"; and substitute, "A third copy shall be forwarded to the cognizant District Medical Officer or to the Staff Medical Officer in each instance where the reporting activity is part of an organization having a Staff Medical Officer."

--BuMed. W.J.C. Agnew

* * * * * *

Circular Letter 46-135 16 September 1946 (Not Restricted)

To: All Ships and Stations

Subj: Report of Medical Survey, Copy to be forwarded to Recruiting Stations in Certain Cases.

Ref: (a) Part III, Chapter 3, Section III, Paragraph 3317.1, Manual of the Medical Department, Revised 1945.

1. In order that recruiting stations may be informed when enlisted personnel with short periods of service are recommended for discharge from service by reason of a physical condition which existed prior to entry into service, it is desired that a copy of the Report of Medical Survey be forwarded to the recruiting station which originally accepted the individual for enlistment.

(Not Restricted)

2. In view of the above the following sentence shall be inserted at the end of paragraph 2217.1, Manual of the Medical Department:

"Whenever an enlisted person with less than six months' active service is recommended by a Board of Medical Survey for discharge by reason of a physical defect which existed prior to enlistment, a copy of the Report of Medical Survey shall be forwarded by the activity initiating the report to the recruiting station which accepted the individual for enlistment."

BuMed. Ross T. McIntire

* * * * * *